

CLAIMS

What is claimed is:

- 5 1. A startup circuit for producing a startup current for an analog integrated circuit device, comprising:
- a first portion including a diode component and a capacitance component, the first portion configured to function as a power supply backup and generate a backup point voltage; and
- 10 a second portion including a current mirror component and a feedback component, the second portion configured to generate a startup current using the backup point voltage, such that the startup current is provided based on the backup point voltage as a power supply voltage.
- 15 2. The startup circuit of Claim 1, wherein the backup point voltage is generated at a node between the diode component coupled to the power supply voltage and the capacitance component coupled to ground.
- 20 3. The startup circuit of Claim 1, wherein the diode component of the first portion comprises a diode connected PNP transistor.
4. The startup circuit of Claim 1, wherein the capacitance component of the first portion comprises a capacitor configured to eliminate static current.

5. The startup circuit of Claim 1, wherein the startup current is provided by the current mirror, the current mirror comprising a first and second transistor coupled to the feedback component.

5 6. The startup circuit of Claim 1, wherein the feedback component includes a first and second transistor coupled to form a positive feedback network with respect to the backup point voltage.

7. The startup circuit of Claim 1, wherein the startup current is
10 generated for an analog integrated circuit device, and is provided based on the backup point voltage as the power supply voltage increases from a power off or transient.

8. A system for producing a startup current for an integrated circuit
15 device, comprising:
a bandgap reference circuit generating a reference current or voltage;
a startup circuit coupled to the bandgap reference circuit and to provide a startup current to the bandgap reference circuit;

wherein the startup circuit includes a first portion comprising a diode
20 component and a capacitance component, the first portion configured to function as a power supply backup and generate a backup point voltage; and

wherein the startup circuit includes a second portion comprising a current mirror component and a feedback component, the second portion configured to generate a startup current using the backup point voltage, such
25 that the startup current is provided based on the backup point voltage as a power supply voltage increases from a power off or a transient.

9. The system of claim 8, wherein the startup circuit is configured to maintain stability of the startup current during a transient in the power supply voltage.

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10. The system of claim 8, wherein the startup circuit is configured to prevent an overshoot of the startup current during a startup.

11. The system of claim 8, wherein the startup circuit is configured for
10 a minimal static power consumption.

12. The startup circuit of Claim 8, wherein the backup point voltage is generated at a node between the diode component coupled to the power supply voltage and the capacitance component coupled to ground.

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13. The startup circuit of Claim 8, wherein the diode component of the first portion comprises a diode connected PNP transistor.

14. The startup circuit of Claim 8, wherein the capacitance component
20 of the first portion comprises a capacitor configured to eliminate static current.

15. The startup circuit of Claim 8, wherein the startup current is provided by the current mirror, the current mirror comprising a first and second transistor coupled to the feedback component.

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16. The startup circuit of Claim 8, wherein the feedback component includes a first and second transistor coupled to form a positive feedback network with respect to the backup point voltage.

5 17. The startup circuit of Claim 8, wherein the startup current is generated for an analog integrated circuit device.

18. A system for producing a startup current for an integrated circuit device, comprising:

10 means for generating a bandgap reference current or voltage;

 means for generating a startup current, the startup current coupled to the bandgap reference current or voltage generating means;

 wherein the startup current generating means includes a first portion comprising a diode component and a capacitance component, the first portion
15 configured to function as a power supply backup and generate a backup point voltage; and

 wherein the startup current generating means includes a second portion comprising a current mirror component and a feedback component, the second portion configured to generate a startup current using the backup
20 point voltage, such that the startup current is provided based on the backup point voltage as a power supply voltage increases from a power off or a transient.

 19. The system of claim 18, wherein the startup current generating
25 means is configured to maintain stability of the startup current during a transient in the power supply voltage.

20. The system of claim 18, wherein the startup current generating means is configured to prevent an overshoot of the startup current during a startup.

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21. The system of claim 18, wherein the startup current generating means is configured for a minimal static power consumption.

22. The startup circuit of Claim 18, wherein the backup point voltage is
10 generated at a node between the diode component coupled to the power supply voltage and the capacitance component coupled to ground.